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REGION III. CONGRESS

Easter 1968 and the Federal Convention in Sydney will have more than the usual significance for the Wireless Institute of Australia for, by the time this is read, final preparations will have been made to receive visitors from the National Amateur Societies of Japan, Philippines, New Zealand and U.S.A.

Sydney and the New South Wales Division will be hosts for the inaugural meeting of the Region III. I.A.R.U. Congress which was initiated by Federal Executive following discussions by Federal Council at Hobart last year.

In many respects this meeting can be likened to the initial meeting of what became the I.A.R.U. nearly 45 years ago when nine nations met in Paris to discuss the formation of an international association of Amateurs. Although techniques have changed, the original concepts are still as true today as in 1924—"the affecting of co-operative agreements between the National Amateur Radio Societies of the world on matters of common welfare; the advancement of the radio art; and the representation of two-way Amateur Radio communication interests in international communication conferences."

However, with the formation of the I.A.R.U. accomplished, national societies in other parts of the world have found that mutual co-operation and unified action within their own Regions can lead to a better understanding and possible solution of the problems facing the Amateur Service—convention in Region I, i.e. Europe-Africa, and in Region II, i.e. the Americas, have become, in recent years, regular affairs with the status of Amateur Radio being the better for these meetings.

Region III—our part of the world—is unique. We are isolated from our neighbours by history and geography; we are part of a Region with a small Amateur population, yet it is significant that three national societies are sending two delegates to this, the inaugural meeting of Region III. It is unfortunate that other societies have not been able to be with us, but we understand their problems.

What then are the reasons for this spate of activity and what does this Congress hope to achieve? The reasons for the activity have been clearly stated in detail in earlier issues of this journal, but let us refresh your memory.

At the next international conference, the Amateur Radio Service, like all other users of the radio frequency spectrum, may be required to justify its frequency allocations. Whilst the Service has been well supported by some countries who recognise the benefits derived, this support can be expected to continue only so long as the Service compares favourably with other contenders for frequency space.

The Amateur Service has not received unqualified support from all countries, many of them claiming that other radio services are of greater importance and that allocations to the Amateur Service should be reduced or discontinued. This problem is of particular concern to new

and developing countries which find that few frequencies are available to them for their varied communication needs.

It is, therefore, vitally important that all administrations briefing delegates for an international conference have a sound understanding of the values of the services they are asked to support.

FEDERAL COMMENT

The basic, immediate, and ultimate aim of this Congress, and indeed the preoccupation of any Regional Congress, is to promote, establish and maintain continuing Amateur activity in all countries so that the recognition of Amateur technological and sociological contributions are justification for continued existence.

How this can be done will be the immediate concern of the delegates in Sydney at this Congress, but it can be expected that discussion will include matters of finance, establishment of technical and educational assistance, and other details vital in the implementation of such a far reaching and important goal.

For our part, we see no alternative to a plan for continuing support to our neighbouring Amateur Societies. It is a plan that does not come cheaply and is made more urgent by the belief that some I.T.U. conferences dealing with frequency allocations will be on a Regional basis.

If a Region III. I.T.U. conference was held now, the fate of presently held Amateur assignments in this Region could well be in jeopardy because Amateur orientated administrations would be in the minority—the threat to our allocations could well be within our own Region!

We have established an I.T.U. fund to send an observer to any I.T.U. conference dealing with Amateur affairs, but this is not enough. With the formation of a Regional association this Easter we must continue our personal contacts, and in the same way that Japan, New Zealand and the Philippines were able to send delegates to Australia, we too, must continue the work started. We must be prepared to finance and send W.I.A. representatives to future gatherings held elsewhere in this Region, and at the same time finance and implement Region III. assistance programmes.

PETER D. WILLIAMS, VK3JZ.
Asst. Federal Sec., W.I.A.

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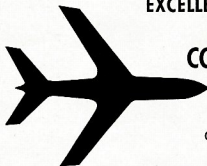
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SINGLE LOOP TRIBAND CUBICAL QUAD ELEMENT

Triband Aerial Principle and Some Applications

H. F. RUCKERT,* VK2AOU

WITH the present sunspot cycle near its peak, DX is again possible on 20, 15 and 10 metres. About fifteen years ago only those few Amateurs could successfully work DX who had plenty of real estate for an antenna farm or had enough engineering ability and cash to build a tower with three yagi beams in Christmas tree fashion stacked on top of each other.

With the last sunspot maximum a number of economy style triband aeri-als were invented, known by the call sign of the designers: W3DZZ, DL1FK, G4ZU, various versions of these aeri-als and the one the writer described, which is called VK2AOU beam in Europe. All these beams were described by the proud owners of large full size aeri-als as "compromise", but we are now convinced that some are a very good compromise, and top DXCC results have been achieved with them. In the meantime about 70% of all successful DX contacts are being made with these shortened beams.

The cubical quad has in recent years joined the list of excellent DX aeri-als, but its popularity is only limited by engineering problems involved to put up and rotate such a monster spider web. A mini-quad would in many cases be the answer, especially if three-band resonance could be had with one wire loop per element.

Experience has shown that an effective aerial is more important than transmitter power (within reasonable limits). Not only the measured or calculated aerial gain is important. This figure would not explain sufficiently the DX results obtainable with a beam compared with a ground plane or di-

pole. The beam brings less noise, less QRM and, if high enough, places the radiation in the right direction to obtain maximum reflected power from the ionosphere.

Knowing that the successful DXer needs some sort of beam, the problem amounts in most cases to finding a reasonable compromise between DX ability of the aerial on the one side and weight and size reduction on the other side. We like to live in peace with the XYL, the neighbours and the local council. That means our aerial must not be considered as dangerous or as an eye sore and it must not hang over the fence of our 50 x 150 ft. block half of which is already covered by buildings. With these limitations in mind, to which we have to add cost and difficulties of erecting the supporting structure and the rotor, most of us will not be in the position to put up a full size 20 metre beam (yagi) or a cubical quad. A compromise, economy style or mini aerial is therefore in most cases the only way out.

The following description of a Triband Aerial Principle may be of particular interest because it can be applied to wire dipoles, ground planes, yagi beams and cubical quad aeri-als. The writer developed the principle about ten years ago. It was published in a number of magazines (see References) and in the antenna book by DM2ABK.

For the benefit of those who were not with Amateur Radio ten years ago, the principle and its development will be briefly repeated, and the second part describes aeri-als which were developed in recent years by DJ2UT and the writer. Early critics have been satisfied by now that this aerial works. VK2AOU

won 1st place for N.S.W. phone section 1957 VK-ZL Contest. VK2AOU won 1st place for Australia, phone section, in the W.A.E.D.C. Contest in 1958, DL-8NU made DXCC with 20 watts with the VK2AOU beam, and DL3GY worked 255 countries in 1966 with this beam.

About one hundred of these aeri-als are being used in central Europe, most of which were built by DJ2UT.† These aeri-als were two and three element yagis with the special triband tuning sections in the element centres using a single co-ax. feed line. A number of ground plane aeri-als using this tuning method are also in use, and cubical quads will follow soon.

Interesting features are that these aeri-als do not respond to harmonics, they have only the desired resonances. They are only shortened at the lowest operating frequency, full size or more at the medium frequency and much longer at the highest frequency. They have no heavy blocking tuned circuits near the element ends. These are the main differences comparing this design with the now popular W3DZZ aerial, which are also shortened at the medium frequency, and which respond to undesired frequencies.

THE MULTIBAND TUNING PRINCIPLE

Fig. 1

Dipole features:

Wavelength: λ .

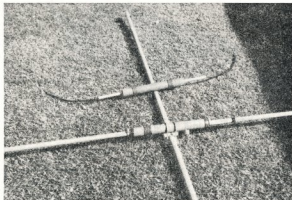
Fundamental resonance freq.: f_n .

Dipole length: $\lambda/2$.

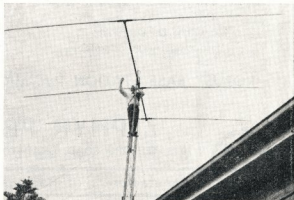
f_n (Mc.) = $300 \div \lambda$ (m).

The dipole has the usually unwanted harmonic resonances at $3f_n$, $5f_n$, etc.

† Walfried Sommer, 7809 Denzlingen, Kandel Str. 33, Germany.



Radiator element mounted to boom of VK2AOU's three element triband beam. Note the coil tuning rings. Director tuning section lies behind, not yet mounted. Tuning section from DJ2UT. The cable type tuning capacitors of the director tuning section can be seen.



Beam 30 feet up on not yet cranked up steel mast. Junior op. on mast.



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Fig. 2

Dipole electrically lengthened with loading coil—
 $f_{ra} < f_{rb}$

Fig. 3

Dipole electrically shortened with capacitor at centre—
 $f_{ra} > f_{rb}$

Both these loaded dipoles have also odd harmonic resonances.

Fig. 4

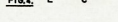
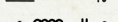
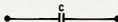
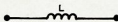
The series tuned circuit behaves similar to the dipole, but only the fundamental resonance is found, as can be shown with a grid dip meter (g.d.m.).

Fig. 5

The parallel tuned circuit has only the fundamental resonance. f_r is in both cases:

$$f_r = \frac{1}{2\pi\sqrt{L \times C}}$$

FIG.1. DIPOLE at f_{r1} .



TWO-FREQUENCY TUNED CIRCUIT (Multiband Tank)

Fig. 6

The parallel combination of a series and parallel tuned circuit has been popular in transmitters, because with suitable components a frequency range of 3 to 30 Mc. could be tuned without changing the coils. This circuit shows always two simultaneous resonances, f_{ra} and f_{rb} , which are not necessarily harmonically related to each other.

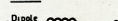
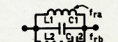


Fig. 7

Two-band Aerial: The dipole replaces the series tuned circuit shown at Fig. 6. L1 and C1 may have any suitable form. C1 may be a piece of cable of the required capacity, but it is not necessary to tune this cable to a particular frequency (G4ZU claim, switching stub). The resonance frequency f_{ra} of L1 and C1 is usually somewhere between the

operating band frequencies (with the dipole element halves disconnected).

The two-band dipole may have different forms:

- (a) A dipole of wire or tubing.
- (b) A ground plane radiator and radials.
- (c) Any yagi beam element, and any number of these.
- (d) A loop of a cubical quad aerial element, any number of these.

These combinations have always two resonances simultaneously, and can be tuned to work on two bands. The full dipole length is effective on both bands. No unwanted or harmonic resonances occur (3rd, 5th, etc.). L1 may be a closed stub or loop or coil. C1 may be a piece of cable, an adjustable or fixed capacitor.

Fig. 8

The one-loop two-band cubical quad element may be tuned for the required radiator, reflector or director frequencies.

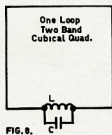


FIG.8.

Fig. 9

Also in the case of the two-band ground plane aerial, L can be adjusted to tune the lower operating frequency, whilst C is more effective to tune the higher frequency.

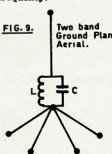


FIG. 9.

Two band Ground Plane Aerial.

THE TWO FORMS OF THREE-FREQUENCY TUNED CIRCUITS

Figs. 10 and 11

Three simultaneous resonances, f_{ra} , f_{rb} and f_{rc} , occur for any L1-C1, L2-C2 and L3-C3 value combination. The Type-A and Type-B versions give similar results. The three resonances are not necessarily harmonically related nor do they have to be evenly spaced. All resonances may fall within a frequency ratio Δf of less than 1:2 or over 1:3.

TRIBAND AERIALS

The series tuned circuit L3-C3 of the Type-A or Type-B circuit can be replaced by any dipole form, like a simple

dipole, the yagi beam element halves, a single loop of a cubical quad, and the radiator and radials of a ground plane aerial. The dipoles are connected to point I and II of the tuning section.

Figs. 12 and 13

Typical conditions:

f_{ra} : Between high f-band and medium f-band (without dipole).

f_{rb} : Between medium f-band and low f-band (without dipole).

Dipole: Resonance (without triband tuning section) between medium f-band and about 80% of low f-band.

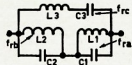


FIG.10. Three frequency tuned circuit.

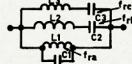


FIG.11. Three frequency tuned circuit.



FIG.12. TYPE. A.

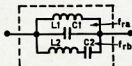


FIG.13. TYPE. B.

Fig. 14

The Type-A or Type-B tuning sections (Fig. 12 and Fig. 13) form with the dipole element halves a triband dipole or any element of a triband yagi aerial. Similar elements may be tuned to work as director(s), radiator or reflector(s). The radiator or other elements as well may be fed.



FIG.14.

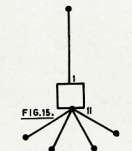


FIG.15.

Fig. 15

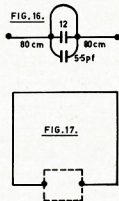
A triband ground plane aerial. Type-A or Type-B tuning sections may be connected to I and II.

Fig. 16

Triband v.h.f. beam element with Type-B tuning section in symmetrical form. Bands at 64 Mc., 102 Mc. and 195 Mc. are covered with this set-up. The tuning inductances are short wire or tubing loops.

Fig. 17

A single loop cubical quad triband element which can be tuned to three bands with the tuning sections shown in Fig. 12 or Fig. 13. Such a cubical quad has only 1/4 the weight and wind resistance of a full size three loop cubical quad of the same mechanical strength.



The mechanical and installation difficulties are many times smaller, so is the cost of the mast, rotor and maintenance. Yes, it is a compromise and the gain is less, but it still puts the signal in good DX company. It is the quad that will be tolerated at many more locations than the big brother presently is. This quad could be used as indoor aerial strung at two opposite room walls. The tuning sections can be switched to change the reflector or radiator function, to make the quad usable in two directions.

The quad is known to be quite effective at less than one wavelength in height, which is the main reason why many quads are better than too low yagi beams.

Triband Tuning: Low f-band resonance depends mainly on dipole length and L1.

Medium f-band resonance depends mainly on C1 and L2.

High f-band resonance depends mainly on C2 and L3.

The aerial must be efficient, because correctly built tuning sections do not become warm, a low v.s.w.r. can be obtained. The radiation pattern shows deep nulls at the sides and the normal beam front-to-back radiation ratio.

EXPERIMENTS WITH TRIBAND ONE-LOOP CUBICAL QUAD ELEMENTS

Example: Desired band frequencies: 80 Mc., 60 Mc. and 40 Mc. Midband frequencies for tuning section (alone) 70 Mc. and 50 Mc.

Fig. 18

a and b—

L1—10 turns, 1.7 cm. diameter, 3 cm. long.

L2—8 turns, 1.7 cm. diameter, 3 cm. long.

C1 and C2—Trimmer, 10-40 pF.

(a) Wire loop = 4 x 1 m. attached to I and II.

Resonances of f_{ra} = 52 Mc., f_{rb} = 70 Mc. (without loop).

Resonances with loop: 40 Mc., 60 Mc. and 80 Mc.

(b) Wire loop = 4 x 1.25 m. attached to I and II.

Resonances of f_{ra} = 52 Mc., f_{rb} = 84 Mc. (without loop).

Resonances with loop: 40 Mc., 60 Mc. and 80 Mc.

c and d—

L1—6 turns, 1.7 cm. diameter, 2.5 cm. long.

L2—4 turns, 1.7 cm. diameter, 1.8 cm. long.

(c) Wire loop 4 x 1 m. attached to I and II.

C1 = 38 pF., C2 = 18 pF.

Resonances of f_{ra} = 42 Mc., f_{rb} = 74 Mc. (without loop).

Resonances with loop: 40 Mc., 64 Mc. and 80 Mc.

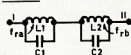
(d) Wire loop 4 x 1.25 m. attached to I and II.

C1 = 32 pF., C2 = 16 pF.

Resonances of f_{ra} = 44 Mc., f_{rb} = 82 Mc. (without loop).

Resonances with loop: 40 Mc., 54 Mc. and 80 Mc.

FIG. 19.



Example: One-Loop Triband Quad Element for 14, 21 and 28 Mc.

Fig. 19

Coil former—3.7 cm. diameter, 8 cm. long.

L1—7 turns, 1.6 cm. long.

L2—5 turns, 1.1 cm. long.

L3—4 turns, 1 cm. long.

f_{ra} = 17 Mc., f_{rb} = 23 Mc. (without loop).

Wire loop—4 x 3.5 m. = 15 m. long, attached to I and II.

Spacing of two one-loop elements: 2.5 m.

V.s.w.r. over all three bands below 1:2.

Type-A or Type-B tuning sections may be used with similar results.

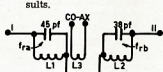
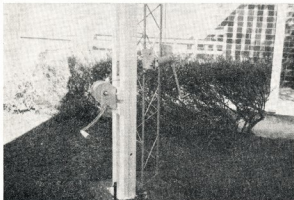


FIG. 19.

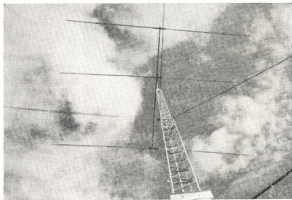
FEEDING METHODS FOR MULTIBAND AERIALS

A simple link coil as shown above may be used. The earlier versions of the VK2AOU beam made by DJ2UT had this link coil and a single co-axial feed line was used. He developed more recently a two element feeder method with a crossed over connecting feeder, to feed also the reflector, which made the front-to-back ratio (reflector tuning) less dependent on the beam height

(Continued on Page 10)



Steel mast with crank up winch, right. Left, 12 feet supporting mast with tilt over winch (boom winch).



Three element triband beam at VK2AOU with central tuning sections from DJ2UT about 55 feet up. A TR-44 rotor is now in use.

A HANDY D.C. SUPPLY FOR THE BENCH

ROLF B. PETERSEN, VK5ZIE

A LONG with many other Amateurs, I felt the need for a flexible general bench supply for development and testing of a wide variety of transistor circuits.

After some thinking and looking around, I came across a Trimax TP1550B transformer, which seemed to be just begging to be put into such a supply. It has four 6.3v. windings, one of which is centre tapped, and one of 5v., all at 3 amps. r.m.s.

I thought that it would be best to keep things quite simple and that a few hours of development and a few more for the final build up would be sufficient. Three months later! I had what seems to be a very useful piece of gear, only, it's not very simple. In fact, when I finally finished it, we will have a fairly ambitious project.

As it stands it has no overload protection, so some care is needed when using it. The overload protection will be added later, probably when I blow up some transistors.

current (I_{cbo}) of germanium ones will upset the works.

The small transistors should all be mounted so that they won't be heated by warm components, e.g. power transistors, rectifiers and transformers. The same of course goes for electrolytic condensers. Easy and ample airflow through the unit should be provided.

Now let us have a look at the circuit diagram. The first thing we see here is that there are three supplies. The one in the middle is the main supply which carries the load, and the two are auxiliaries.

The regulated supply at the bottom provides a stable +20v. rail which is used as the reference source. The tranny was hand wound on an existing core.

From the one on top we get 6.2v. which is riding on the output rail and is used as collector supply for the amplifier transistors and the first emitter follower. This is known as a pre-regulator and it greatly improves regu-

little. A 4,000 uF. 50v. condenser is used as reservoir and from it the regulator 2N513B is feeding the load through 40 megohms which gives the meter a 2.5a. range. A spare relay contact at this point keeps the meter disconnected until the first charge-up surge into the 5,000 uF. condenser has passed.

A d.p.d.s. switch serves to convert the meter to a voltmeter and, having a 50v. range, it then monitors the voltage right at the output terminals. This is also the sensing point for the error amplifier. Switch 1b selects a suitable tap on the 1K resistor chain for every chosen output voltage. The 1K pot. at the base of the first amplifier is a front-panel control and sets the exact voltage at the output. It is possible, on the higher ranges, to turn the output voltage down beyond the next lower step, i.e. from 24v. to below 18v. This should not be used as it may overload the 2N513B and, if driven too far, will result in inferior regulation. However, the full range of 6v. from one step down to the next can be confidently used to the full two amp. capacity.

The bottom end of the chain goes via 2.7K and a 2K trimpot. to the +20v. reference rail. On initial adjustment the output selector S1 is set to 6v. and the 2K trimpot. is then used to set the output to just over 6v. with the 1K front-panel control fully c.w. Before that, of course, the 20v. reference supply must be adjusted.

The error amplifier is a differential type and uses four BCY11 transistors in Darlington connection. These four transistors must be thermally strapped together. To do this I used four Philips mounting clips and screwed them back to back in a sandwich fashion. No other heat sink is required at this place.

The 513B is mounted on a commercial heat sink which is insulated from the remainder of the unit. There is no mica insulation between the 2N513B and its heat sink, for better heat transfer. This transistor is driven by two emitter followers, a 2N1183 and a BCY11. The leakage current of the transistor used in place of the 2N1183 must be low, even at high ambient temperatures, to enable the output to go down to zero.

Turning now to the +20v. reference supply, we see that it is a straight forward stabilised supply. It contains the relay and time delay RC combination. There is an OA5 diode included which is normally off and comes into action when the unit is switched off. What happens is that upon switching off, the reference supply discharges more quickly than the 5,000 + 4,000 uF. condensers in the main supply and they will charge the 1,000 uF. condensers in the reference branch the wrong way, which will make the latter ones unreliable after some time. The OA5 prevents the reference rail from going more negative than 0.2 of a volt.

Some experimenting went into the attainment of reasonable temperature

(Continued on Page 16)

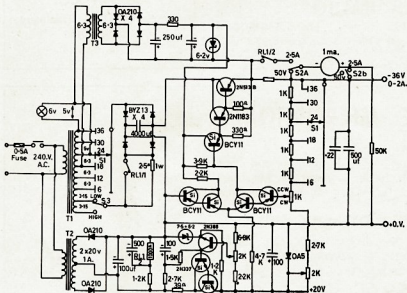


FIG.1. REGULATED POWER SUPPLY.

Performance is fairly good. The supply will deliver any voltage between zero and 36v. at currents up to two amps. Regulation is better than 0.25%, temperature stability is about 0.1%/°C. or better.

One useful feature is the fact that one can simulate flat batteries by connecting a small value variable resistor in series with the output and adjusting the volts to suit.

The transistors used in the unit are types that had been on hand. Other types can be used, of course, as long as their characteristics are similar. It is important to use silicon transistors where indicated, as the high leakage

lation of the output voltage. The transformer (T3) can be a t.v. booster. If a main transformer (T1) with an additional 6.3v. winding can be bought or wound, so much the better.

Back at the main supply, we see that the voltage which is applied to the bridge rectifier is increased in step with the selected output voltage. I did this to keep the dissipation in the 2N513B at a comfortable level.

Also in that part of the circuit is a 2.5 ohm resistor, which is shorted out after 0.4-0.5 sec. It limits the switch-on surge current to an acceptable level, thus enhancing the life expectancy of the four BYZ13s and the 2N513B a

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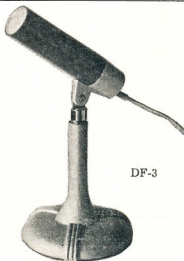
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ADDITIONAL NOTES ON TRANSISTOR REGULATED POWER SUPPLIES

The referred to power supplies featured in "Amateur Radio" in February, April and May issues, 1967. R19 of the power supply (April issue) should be 30 watts, not 3 watts as shown. In Fig. 2 (same issue) the AC127 is shown as a PNP when it is a NPN type, see accompanying diagram. It is suggested

uF. capacitor wired across the base-collector of the AC128 control transistor TR2. A paper capacitor may also be placed across the output of all these supplies, should the electrolytic across the output go open all sort of funny effects can occur such as oscillation of the more sophisticated of these supplies.

Now referring to the a.c. supply for the 122 set, R6 is the 1 ohm resistor in the collector lead of the 2N441 transistor and R5 is the 680 ohm resistor between the plate of the VR150 and pin 2 of the Set input. A modification to save one zener diode Z1. The cathode of VR150 can be taken to the 12 volt regulated line which goes to the valve filaments and heaters, etc., on pin 10 or 12 of the Set input. R1 is the 68 ohm 1 watt resistor.

I hope in the future to design yet another type of transistor regulated power supply using a variable duty cycle multivibrator controlled transistor switch operating at a frequency somewhere between 1 kc. and 10 kc. This type of supply would be much more efficient than the preceding ones that I have described. Depending on how experiments go as to when this proposed supply will be presented.

—Rodney Champness, VK3UG.

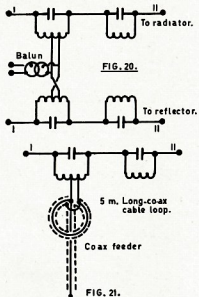
SINGLE LOOP TRIBAND CUBICAL QUAD ELEMENT

(Continued from Page 6)

and surrounding objects. A ferrite transformer or cable balun may be used to connect the feeder.

Figs. 20 and 21

The phase relationship of the fields in L1 and L2 vary from band to band so that too much direct coupling between these coils has to be avoided. It is not necessary, as originally proposed by the writer, that separate link coils and feeder cables be used to couple to L1 and L2. Coupling to the larger coil is sufficient, as found by DJ2UT.



SOME PRACTICAL DESIGN FEATURES

DJ2UT used short pieces of co-axial cable as capacitors and they are later placed inside the element tubing. The coils and inner capacitor ends are sealed and moulded in resin. The centre section is about 40 cm. long and has 5 cm. diameter. The tuning of the lowest frequency is carried out by adjusting the element length. The medium and highest frequency are tuned by shifting copper rings more or less over the ends of L1 and L2, which can be done from outside without affecting the sealed coils in any other way.

The writer wishes to thank OM Sommer (DJ2UT) and his co-workers for the very considerable amount of work carried out and the many good and practical ideas which made successful aerials with this triband principle.

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- "DL-QTC" (DL), March 1968, by VK2AOU.
- "Funk-Technik" (DL), No. 16 and No. 17, 1969, by VK2AOU.
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- "DL-QTC" (DL), June 1964, by DL7BE.
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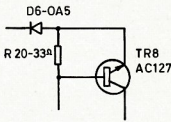


FIG. 2. Correction.

that C6 in the same power supply should be an electrolytic designed for high ripple operation, this applies to the reservoir capacitor in all four types of supplies described in the three articles.

The two power supplies using output voltage sampling may also have a 0.01

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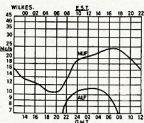
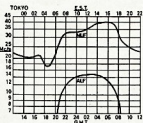
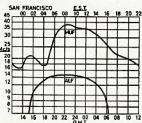
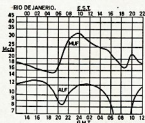
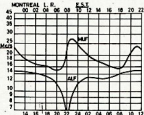
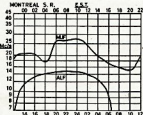
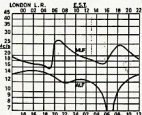
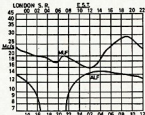
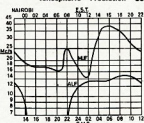
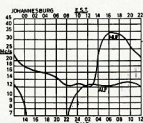
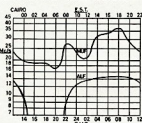
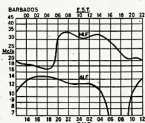
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PREDICTION CHARTS FOR APRIL 1968

(Prediction Charts by courtesy of Ionospheric Prediction Service)



USING A PHASE COMPARATOR

K. C. BICKNELL,* VK6ZCB/T

This article is designed to help many who will be endeavouring to extract telemetry data from the Oscar Australis satellite. The telemetry takes the form of an audio frequency appearing in the range 500 cycles to 3 Kc.

To obtain accurate data from this a means of measuring the frequency is required, once the frequency is known the use of calibration charts will give details of satellite functions. As can be seen, reasonable accuracy of audio frequency measurement is essential. Methods used can be direct reading frequency meter or digital frequency meter, however these can give inaccuracy under noisy signal conditions. Another method is to use a standard oscillator and compare it with the audio signal from the satellite. This can be done by feeding both into a c.r.o. and forming a Lissajous pattern; this system is difficult when noise on the incoming signal is fairly high. One other point is that not many shacks are equipped with digital frequency meters or a c.r.o. A simple method is to compare the two frequencies by ear but once again under noisy signal conditions accuracy of reading is hard to obtain.

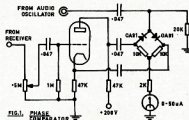


FIG. 1. PHASE COMPARATOR

By using a phase comparator we overcome the noise problem and have a cheap direct reading device that can be used off receiver audio during a satellite pass. This means that those who don't have recording facilities can still extract important information and assist in the project. However, this unit can be used in conjunction with tape, after the pass, to extract data.

There is one problem, however, tape recorders have inherent wow and flutter, which will cause frequency modulation of the recorded signal. To determine the unknown frequency under these conditions the standard oscillator is tuned until the meter deflects negatively or positively, depending whether you are high or low in frequency. As you near the exact frequency the meter will oscillate between negative and positive, and when the amount of deflection is equal in the negative and positive directions the frequency is exactly in phase and a direct reading from the oscillator calibration can be taken. When measuring from tape, the frequency and severity of the deflection will depend on the condition of your tape machine.

When measuring under ideal conditions, such as direct from receiver audio, a steady negative or positive reading will appear on the meter. When the standard oscillator is exactly on frequency the meter will read zero. There will be no reading on the meter until the standard oscillator approaches the frequency of the unknown signal. A sudden deflection occurs when about 20 Kc. off frequency, it is then only necessary to adjust the standard oscillator until the phase comparator unit reads zero.

A short description of the phase comparator (Fig. 1) may help you to understand its operation. It is basically a bridge, of which two arms are fed from the unknown signal, one 180° out of phase with the other, obtained using a phase splitter. The standard source is fed into one leg and the other side of the bridge is fed to a centre zero 50 uA. meter.

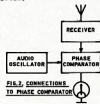


FIG. 2. CONNECTIONS TO PHASE COMPARATOR

The unknown signal being 180° out of phase, will produce no output; this also applies to any noise on the incoming signal. When the standard signal is not in phase with the unknown signal, the bridge will be unbalanced, one diode will conduct depending on the phase relationship between the signals, and a negative or positive voltage will appear at the arm of the bridge being metered. As the two frequencies approach each other the meter will move towards zero. When both signals are in phase the bridge is once more balanced and a zero reading will appear on the meter.

As you can see, unless noise is occurring at approximately the same frequency as is being read, it has no effect on the meter reading. Under test conditions a 1 Kc. tone was set up on a c.r.o. and receiver noise was added until the original signal was not visible, being completely masked by noise. There was no change in accuracy of measurement, and for that matter, no indication of the presence of noise.

I will not add a circuit of the audio oscillator, as many circuits have been published. One in the December "Electronics Australia" should be suitable, but one improvement would be to bandspread the range between 500 cycles and 3 Kc. to obtain greater dial calibration accuracy. Any commercial unit should be suitable, provided its calibration accuracy can be trusted.

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Sub-Editor: PHIL WILLIAMS, VKSNN
37 Winns Rd., Coromandel Valley, 5051

HAMILTON S.S.B. GATHERING

The January 1968 holiday week-end saw yet another successful Sidebanders' Gathering at Hamilton, Victoria. This was the third of these week-ends, which are held every other year. Local organisation was by Danny VK3ADD, Ern VK3AEM, and Tim VK3TWF, all of Hamilton, assisted secretarially by Dud VK2DQ, who, unfortunately was kept at home in Broken Hill by a throat infection.

Sidebanders assembled at the Western Motel on the Saturday afternoon before the dinner in the evening. Several arrivals were filmed and shown on the Ballarat Regional Television that evening. With true journalistic licence the announcer described proceedings

tions governing power output of s.s.b. transmissions.

The second speaker was George VK3VX, who is the Institute's I.T.U. representative and organiser of the "Intruder Watch". He stressed the reasons why band occupancy is so important if we are to retain their use and not have them swallowed up by broadcasters and other unidentifiable intruders.

Geoff VK3AC had a few words of wisdom on further measures for mobile interference suppression. He followed this with a tape of Mr. A. Hancock as a Radio Amateur which gave us all the chance to laugh at "ourselves as others see us".

Finally Ray VK3ATN told us of his 2 metre moon-bounce experiments for which he received his Award of Merit from the A.R.R.L. He did well to tell us so much in the short time available, and concluded with tape recordings of the actual moon-bounce contacts.

Should you contact any VK side-bander who tells you that "It raining in Tokyo is not," you will know that he enjoyed his visit to Hamilton—January 1968.

In the original circuit a simple screen grid dropping resistor was used, but I found it necessary to use a voltage divider, as shown in Fig. 1, otherwise, when you try to bias the 6BA6 grid to reduce its gain, the screen grid draws less current and its voltage swings up to almost full h.t. and the gain does not reduce as required. Adding 100K from grid 2 to earth had the desired effect.

As published, the 6BA6 had a plate load resistor of only 22K ohms, and so its output was very small. Obviously the original was intended to provide an output signal at a level similar to the microphone. Increasing this to the 100K ohm shown gave sufficient drive for the 6C4.

The 6BX6 only amplifies the signal and the network with diodes, resistor and condensers which follows it, provides the control bias for the 6BA6. The a.f. signal is fed to the 6BA6 by the 0.0068 μ F. capacitor. The OA85 diodes are nothing special and any germanium diodes with high back resistance will be satisfactory. Those used measured about 0.5 megohms on the ohm meter's "ohms $\times 1000$ " scale.

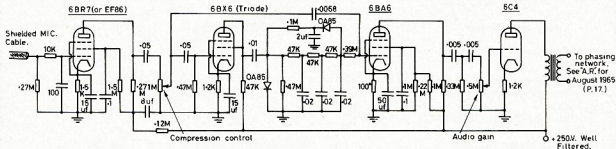


FIG. 1. AUDIO AMPLIFIER FOR S.S.B. EXCITER-WITH SPEECH COMPRESSION.

at the Hamilton "Single-Side-Board" convention, but this was "heavily" corrected at the second showing. How would they react if we were to refer to their "vestigial sideboard transmission"?

The trip to Hamilton was hot for all travellers except for John VK2QJ and XYL Ruth, who flew down from Berri (N.S.W.).

It was much cooler next morning for the technical lecturettes at the R.S.L. Hall. The first speaker was your scribe with a brief review of current matters of interest to sidebanders, in particular the newly promulgated P.M.G. regula-

SPEECH-COMPRESSION FOR EXCITERS

I have built speech compressors before, the old type with push-pull variable- μ tubes with transformers and full-wave diodes, and more recently the transistor type, to save space. The former are too large, and the latter appear to add quite a bit of distortion which some hours of persistent work did not correct.

Then came the simple valve job in February 1963 "QST," so I decided to build it into the exciter here at VK5NN. I have followed the original circuit rather loosely, and made the following discoveries and changes:

The original amplifier was shown in August 1965 "Amateur Radio" on p. 17. This used a 12AX7 followed by a clipper to drive the 6C4 output stage. Two more valve sockets were fitted to the chassis, the first a 9-pin (novol) and next a 7-pin miniature for the 6BA6 controlled tube. The first change was to re-wire the 12AX7 socket to take a 6BR7 low-noise audio tube—much like an EF86 which is probably more readily available in Australia.

A 6AB4 triode was hard to find so a 6BX6 was used as a triode, but it was necessary to double the plate resistor to 47K to get sufficient voltage out of the stage to bias off the 6BA6.

This compressor appears to do the job without introducing distortion. If you expect to be able to walk around the shack and talk, letting the poor compressor take up the changes in level you will be disappointed, but tests on the air showed that it had adequate control from about 2 feet to 3 inches from the mouth, with normal speaking, although room echoes, the clock, the dogs and kookaburras, all tend to show up between words if the mike is too far away.

The beauty of this compressor is the small space it took to build it into the exciter. It will certainly be useful for shack visitors, especially when "Jamboree of the Air" comes around again.

73 for now. Phil VK5NN.

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TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R." in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners are required.

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- ★ BN-86 Balun, \$17.50.
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- ★ HA-14 Linear Kits with power supply, \$225.
- ★ Heathkit HW32A single band Transceiver Kit for 14 Mc., \$170.
- ★ New-Tronics 4BTV 80-10 metres Vertical, \$70, or without 80 metres top loading, \$55.

Since the absence of Arie overseas, I have been doing my best to meet the needs of all. He informs me that in a short while he will be homeward bound with a stopover in Japan to glean from what is offering there the best in Ham gear and this will be put on the market on his return at our usual competitive prices.

—Alex Outtrim.

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VK2AOU	—	—	2785	630	355
VK2PN	—	—	—	—	795
VK2AKM	—	—	4090	3520	2425
VK2AKX	—	—	2885	2930	1000
VK2SM	—	—	—	—	4810
VK2AKS	—	—	3745	—	3745
VK2YQ	—	—	815	1185	—
VK2ABA	—	—	—	1175	—
VK2XB	—	—	870	—	2685
VK2LT	—	—	5280	2130	5095
VK2FA	—	—	4410	1985	770
VK2SF	—	—	7120	—	7120
VK2AO	—	—	—	—	3590
VK2XJ	—	—	—	—	1155
VK2BB	—	—	3495	3435	2960
VK2WP	—	—	—	—	5165
VK2KJ	—	—	—	—	4625
VK2EK	—	—	—	—	4355
VK2MF	—	—	—	—	3815
VK2SP	—	—	—	—	2865
VK2Z/T	—	—	—	—	2615
VK2XX	—	110	6905	4801	7435
VK2RU	—	—	8020	3555	7005
VK2DM	—	—	320	6810	3420
VK2SM	—	—	765	3980	3850
VK2GN	—	—	5350	4075	6030
VK2DR	—	—	1235	3545	4100
VK2PJ	—	—	815	2060	4145
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ZL1AF	—	—	—	4095	—
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ZL1AG	1460	—	—	—	1400
ZL1AY	—	—	5010	—	5010
ZL1B	—	—	—	1735	—
ZL1QH	—	110	7825	4240	2715
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VK1SO	455	935	1180	975	630
VK1RX	—	—	2935	—	2935
VK1RU	—	610	6135	4555	7260
VK1BA	—	—	5465	—	7715
VK1SM	—	2125	5945	2525	—
VK1RY	—	—	—	385	—
VK1NA	—	—	55	4025	3885
VK1GN	—	1520	4945	3775	4475
VK1WD	—	—	55	2370	4100
VK1XI	—	—	—	3770	2930
ZL1AJ	—	—	450	7710	7285
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ZL1IL	—	—	—	4550	4495
ZL1AF	—	—	—	3420	3605
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ZL1HV	—	—	—	—	5155
ZL1B	—	—	—	2460	600
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ZL1DM	—	—	—	—	5585
ZL1AZ	—	—	—	—	410
ZL1QH	—	—	—	8190	540
ZL1BO	—	210	1150	7025	6220
ZL1AO	—	—	—	—	2115

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VK4	WIA-L5080	—	925
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VK7	WIA-L6035/P	—	540
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VK6	WIA-L6042	—	11790

OVERSEAS

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KOL/LKGG	3150	WDWGW/VRR	188
KOGA/K	4013	—	330
North and South America			
HP1LC	6512	WAPXFP	138
KP4CK	1290	KSJEF	1740
LUI1A/B	1680	OA8FP	14625
PY3SO	2010	KOGJ/D	12768
PY3HT	60	WBKALK	8897
TG8IA	3100	KOSVL	814
VE3IN	60	WBISQ	657
VE7AHQ	4931	W6QJW	351
WAGCJU	5017	WY6VZV	2
WAEAMS	4710	DM8ID	92
WAGFW	468	WYVEX	627
WIBIH	198	W9LKI	2369
KNDJF	2576	W9KXK	441
WU1US	5785	YV1EL	2210
WNBV	5378	YV5BJP	2200
WH4OS	232	—	—
Japan			
JAI4DN	2140	JASLI	2040
JAI1NM	189	JASPU	1561
JAI1BN	168	JAGAD	6886
JAI1SV	185	JAGAL	4456
JAI1PV	75	JAGWJ	1881
JAI1NE	10	JAGATL	1241
JAI1GTQ	8	JATCD	2940
JAI1G	8	JZ4P	495
JAI1TJ	990	JATDXX	756
JAI1A	720	JASW	1726
JAI1FB	65	JASAA	480
JAI1GRO	72	JABBB	320
JAI1FM	804	JABGR	12
JAI1QR/5	450	—	—
Asia			
UA5OH	1287	ZC4CN	2290
UG6AW	10	EP2BQ	2820
Europe			
CT1MW	266	OH4GU	106
DJ2ET	1235	OH8PT	925
DJ3TL	7140	OH8DU	968
DJ2JO	88	ON8KY	676
DI4AX	3255	OZ8KE	372
DJ7TC	135	OP4P	4401
DL1AM	18	OZ8BH	94
DM2ATD	1400	PA6NTR	24
DM2CZL	2970	—	—
F3IH	270	SL1CP	90
FK1W	2964	SM2AGD	912
GHA8	897	SM8BS	280
GK8SH	162	SM8CM	460
HA8LC	12	SM4ARQ	18
HA1SB	10	SM4AP1	3861
HA1KX	12	SM4AKK	2441
HB8AKJ	10	SM7CRW	2441
HB8DX	112	SM8WB	455
WG7YA/LA	5760	SM8BUD	540
OH8T	40	—	—
OH8BZ	53	YO3ZM	42
OH8BA	189	OX8BK	1170
U.S.S.R.			
UA1KBB	2508	UA6AK	6136
UA3KBD	224	UB8KMX	530
UA3AVV	296	UB8WJ	732
UA3JVN	175	UB8AREK	432
UA3DR	5084	UA8KA	540
UA3KBO	4096	UC8BF	162
C.w. Section			
Oceania			
FO8BJ	15	VB8DK	1770
KH6JJ	—	—	—

North America			
VE3AU	1190	WB8UK	1890
VO1FB	60	WA8EPQ	14529
W1VET	978	WB8CX	8674
W1VIL	3320	WB8PK	4685
W2LW1	4872	W8YU/W8U	3130
K3COR	368	W8ISQ	45
W3VW	115	W8VW	14608
W6WNV/3	6014	W8FA	11310
W3MFV	1552	WB8DP	169
W3DF	1185	K8M2C	45
W3KID	220	WB8V	16
W3QCR	224	WB8KK	574
W3UHN	36	WB8IN	490
W3VW	1870	W8TQ	274
W4NBV	3796	W8QWM	202
W4HOS	819	W8QCU	1170
W8WZQ	7956	—	—
South America			
EC1TH	1008	PY3OU	132
FY2BH	1832	—	—
Japan			
JAI1MN	4811	JAI3YC	741
JAI1DN	4536	JAI3RO	270
JAI1TL	2805	JAI3CJ	369
JAI1KG	2694	JAI3JO	2116
JAI1SV	644	JAI3FN	630
JAI1WJ	644	JAI3QJ	630
JAI1BS/1	60	JAI3PR	270
JAI1PG	30	JATCDU	5270
JAI1A	1850	JAI1ARU	1028
JAI1TH	3194	JAI1B	1028
JAI1ZF	560	JAI1BGW	840
JAI1ZU	385	JAI1BFM	240
JAI1KM	672	—	—
Europe			
DL7AA	2972	OH2BDV	484
DM2AND	3240	OH5RZ	374
DL4KJ	2100	OH2BAH	300
DM4CJ	1880	OH2CW	288
DM8SBM	1453	OH7NW	288
DM8ID	1892	OH2BAD	114
DM2AU	1515	OH5WH	108
DM8ID	432	OH7YL	90
DM8BR	390	OH2BR	90
DJ7HT	262	OH1UR	18
DJ7B	270	OH2B	638
DJ3GG	112	ON4X	1354
DM4UJ	95	OZ1LO	3924
DM8BDH	50	OZ4FF	1380
DM8ID	50	OZ4CP	1380
DM8BN	30	OZ2DP	2
DM8M	2	PA8VO	1380
PA8V	520	PA8V	2001
F2P0	168	SM8AF	2001
G8JHJ	1808	SM8BNX	1908
G8SSO	3172	SM8BUD	1504
G4CZ	3492	SM8BUD	1504
G8RI	3025	SM7ANB	386
G8RP	2241	SM8BUD	225
G2DC	172	SM4ARQ	164
G3DYD	1638	SW3WB	18
G3KSH	240	SM2BY	8
GM3JZK	306	SM8CER	164
H8JG	96	SP8AI	886
HE8GMP	602	SP8AXW	338
HB8DX	286	SP8AG	168
HB8J	172	SP8BA	168
W0GTA/LA	508	SP8APJ	48
OH8UK	3042	Y0AEXE	18
OH1TN	2775	Y0BCK	18
OH8B	1272	Y0BCK	2006
OH8YB	1407	Y0KCE	1764
OH8MK	750	—	—
Asia			
EP2BQ	2548	UA1KAR	220
U.S.S.R.			
UA1KBB	748	UB8WU	790
UA1ZW	495	UB8WU	540
UA1ZX	482	UB8UC	210
UA1ZL	482	UB8UC	50
UA1ZN	252	UB8UC	50
UA1KAI	60	UB8ML	972
UA1PU	32	UB8KFF	960
UA1ZM	224	UB8KFL	504
UA1UJ	1887	UB8SKA	192
UA1ZP	408	UB8SKA	55
UV3AAM	243	UB8OD	15
UA1KUR	168	UB8TH	12
UA1KBA	168	UB8TLN	10
UV3TP	22	UC8KGF	20
UV3HV	32	UC8WV	20
UA1KAM	510	UL8AG	40
UA1KAK	530	UL8RG	1900
UA1KAE	750	UL8GW	114
UE8BS	507	UL8GI	21
UA1KAK	500	UL8GI	10
UE8BK	176	UP8ADZ	56
UE8LC	63	UP8BK	2

Moon-Bounce Schedule

The following information was received from the Foreign Section Editor, V.E.R.O.N. V.h.f. Bulletin, Schiedam, Holland (Box 13).

SPECIAL BULLETIN

From: Crawford Hill V.h.f. Club, W2NFA, Holmdel, New Jersey, U.S.A.

Issued: January 10, 1968.

Subject: EME TEST—An EME Test is scheduled for April 12-14, 1968, on 1296 Mc. All stations having adequate 1296 Mc. equipment are invited to participate. Schedule request will be honored in advance by mail. Please state equipment equipment.

An alternate test period is also provided in the event that local weather or technical difficulties prevent operation on the above dates. The alternate test periods will be April 19-20, 1968.

Station equipment at W2NFA: Transmitter power, 200 watts minimum output; transmitter frequency, 1296.000 plus or minus 5 Kc. Mode of transmission, C.W. or F.S.K. Antenna, 60 ft. parabolic reflector, estimated gain 44 db. above isotropic. Polarisation, right circular transmit, left circular receive (I.R.E. definition). Receiver n.f.s., 3 db.

Moon visibility at W2NFA (40.1) degrees N, 74.2 degrees W:

Moon Rise 2200 GMT, April 12, to Moon Set 1028 GMT, April 12. (Friday night orbit—we may start late).

Moon Rise 0618 GMT, April 13, to Moon Set 1057 GMT, April 14.

Moon Rise 0920 GMT, April 19, to Moon Set 1900 GMT, April 19.

Moon Rise 0705 GMT, April 20, to Moon Set 1832 GMT, April 20.

Procedure: Echo testing will commence at moon rise and continue for one half hour prior to any schedule. Estimated echo S/N in a 1 kc. bandwidth is plus 11 db.

All reports of reception will be greatly appreciated.

Official liaison station: W2NIDH will assist as official liaison station on either 14,235 kc., 21,385 kc. or 28,690 kc.

ATTENTION V.H.F.'ERS

During the early months of 1968, Iceland will be represented on 144 Mc. From approximately 25th Jan. to 15th April a station will be in operation at Keflavik on the 7, 14, 21, 28 and 144 Mc. bands, using maximum legal power (150 watts input). Sufficient system gain should be available to almost guarantee contact with the U.K. on 144 Mc. Skeds with other countries will be desired.

Publications Committee Reports

February Meeting.—The committee received correspondence from VKs 2ALK, 3AHS, 3ASC, 3AMK, 3ZCQ, 3ZKC, 4ZAL. Technical articles arrived from VKs 3AOU, 2JIR, 3UG (3) and 4BM. These contributors will, as usual receive acknowledgments through the mail.

It was decided that we would in future hold our meetings on the first Monday in the month unless the second Monday falls no later than the eighth of the month. By this means, we can avoid late meetings and the exclusion of monthly reports through meeting nights falling due after "A.R." has been passed to the printer.

The financial position of "A.R." was considered, and as a result we resolved to publish fewer pages for the next few months and to approach Federal Convention for a price increase. The future of "A.R." depends on their decision.

After reviewing all the technical articles published in the previous year, it was decided that the Awards for Technical Articles should be made to Messrs. K. A. Kimberley and F. T. Hine. Many names were considered for the Higginbotham Award. It was agreed that this award should go to Ian Berwick, VK3ALZ, as recognition for his consistent submission of articles on original work and research he has done.

March meeting.—Technical articles were received from VKs 2ZPM and 6ZCB, whilst correspondence was received from VKs 2AFD, 4ZAL, 4ZIM and Owen Mace of Project Australis.

Discussion centred round the unsatisfactory position with the mailing service, and the possibility of making a change will be again investigated. A number of letters have been received on the subject of the new regulations and particularly the code speed requirements. These are, at the time of writing, with Federal Executive for vetting, and will all be published in the May issue.

SUBSCRIPTIONS DUE

All members of the W.I.A. are reminded that annual subscriptions are now due and should be paid promptly to their Divisional Secretary. Non financial members will not receive a copy of "A.R.", and back copies may not be available upon request. To preserve continuity of your files of "A.R.", please pay your annual subscription now.

A HANDY D.C. SUPPLY

(Continued from Page 7)

stability of the 20v. rail. I found a fair solution by using a 6.2 + a 7.5v. zener diode together with a germanium transistor, the 2N388, as amplifier.

All three supplies rely on a charge of the reservoir condenser to near peak transformer voltage for proper performance. Therefore, the transformer diode combination must have the required peak current capabilities.

Switch 3 is left in the low position for light loads and is put into the high position if the output voltage drops under load. There is a possibility that the output may drop under high load in the 6v. position of S1. If that occurs, the lead from S1a pos. 1 can be connected to the 12v. tap and the switch No. 3 put to low, thus applying 9.45v. to the rectifier.

The top supply, or pre-regulator, keeps a more or less constant current in the 3.9K collector resistor of the amplifier. This current is then distributed between the base and collectors connected to the right hand side of 3.9K according to input voltage level and load and Mr. Kirchoff.

The first emitter follower, the BCY11, also benefits from a constant collector supply.

Now then, with a fairly well stocked parts shelf, some patience and the above words, plus circuit, you can, if you wish, go to it. Shouldn't take you three months.

— . . . —

VK-ZL-OCEANIA DX CONTEST

(Continued from Page 15)

Listeners' Section

A3942	.....	2074	REF18783	.....	1294
A5224	.....	3082	SP2-7143	.....	380
BRS-26431	.....	6944	SP1-7025	.....	80
CG7796	.....	114	UA1-7451E	.....	816
DL12006	.....	2694	UA3-3702	.....	480
DL10101	.....	44	UA3-12982	.....	678
DM2542/L	.....	126	UA4-14144	.....	56
DM2509	.....	320	UE3-081-3	.....	58
DM2468-N	.....	928	UA9-2847/UA3	.....	1260
DM0772/J	.....	18	UA9-9721	.....	448
DM2164/F	.....	18	UE3-070/UA3	.....	1274
DM3606/F	.....	122	UE3-0451/UL7	.....	960
DM4020/L	.....	618	UQ2-037-10	.....	1864
DM2109/M	.....	1388	UQ2-22421	.....	1022
HAS-153	.....	60	UE3-40067	.....	4600
HA6-220	.....	280	VE3-11006	.....	24
HT-12567	.....	720	VU-SW10626	.....	630
JAT-1819	.....	588	W2-2272	.....	1120
JAE-1820	.....	1562	WPE2BLU	.....	1708
ONL-2913	.....	1204	WPE2BLN	.....	2226
ONL-885	.....	16912	WFE5AA	.....	660
NR18	.....	580	W8-2260	.....	48
REF17535	.....	360	YU2RS-233	.....	410

Check Logs

EISF	OZTKV	ZS6D
JAMIN	PZICQ	SM7MO
JATFO	PZ2AH	SM6RKP
LZ1YW	SP2BMM	PAJPC
OE3WVB	UAKBA	G3WV
OE3VQ	UENVG	OH3ED
OH3VY	VK3HL	DM3W50
OH3SM	WIWY	DM3RE
OL3GW	WITX	DM2BTO
OZ3FO	W4ZER	DM2BLJ
	YOKKA	

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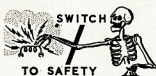
Telegrams: "Metals," Melb.



HANSON ROAD,
WINGFIELD, S.A.

Phone: 45-6021 (4 lines)

Telegrams: "Metals," Adel.



TO SAFETY

Amateur Radio, April, 1968

SOUTH AUSTRALIA

Since the completion of the Ross Hull V.h.f. Memorial Contest six metre activity has been very sparse. However, there have been numerous reports of 3A signals heard on 30 MHz during February, but as yet no signals have been heard or worked on 32 Mc.

Two metre activity on the other hand has been extremely high since January. Mick VK3ZDR moved QTH temporarily to Tantanoola in the South East, approximately 15 miles north of Mt. Gambier. Mick reports that he has 10 to 12 elements young and old, planted 10 feet high and running his usual 100 watts. Signals from Mick into Adelaide have been consistent and always readable 5 with signals approaching many decibels over strength 9 on most occasions. Supplementing the activity from the South East area are John BHP, Col SCJ and Gene C2KZ, who have also been putting very strong signals into the Adelaide area. The most notable opening of late on 2 metres was on Tuesday Feb. 25, when many Adelaide stations worked into the Kaniva and Yanac areas of VK3. During the same evening the South East stations were working into Melbourne and Mick SZDR reports working 34 VK3s around that area. Also on Feb 7 Mick worked VK7ZAH both ways on 2 mzx for the first time from his new QTH. John SZLJ worked previously twice from his old location.

Again an upsurge in 576 Mc. activity has occurred and an Australian record of approximately 145 miles is to be claimed by John SZLJ and Graham SZLJ. John was located 17 miles south of Kingston and Graham at Mt. Barker in the Adelaide Hills. 16 element collinear arrays were used at each site, John SZLJ was using stabilised gear. Signals were RS S8 both ways. Consequently, activity is high on 576 Mc. and we would expect that this record is bound to fall in months to come.

On 2nd Feb. the annual general meeting of the V.h.f. Group of South Australia was held, and the officers elected for the ensuing year were: Chairman, Eric SZLJ (re-elected); Vice-Chairman, Edwin SZLJ; Sec.-Treas., John SZLJ; Councillors, Barry SZMR, Mick SZQF. Extensive discussions took place and a programme for the coming year and the committee are presently formulating a programme to be followed. From all indications it appears likely that 1988 will be the greatest year ever for v.h.f. activity in VK3, 73, SZHJ.

NORTHERN TERRITORY

Barry VK8DI is running 30 watts a.m. on 52.3 Mc. to a 6 element beam. Mick VK8ZMR runs about 25 watts a.m. to a 5 element beam and is using commercial gear, ex U.S.A., and is v.f.o. controlled and usually nets on caller's frequency.

VK8AU has a.s.b. about 45 watts p.e.p., is located at Batchelor and is surrounded by tropical jungle. It is a pity that the station seems to work okay. VK8ZBR is still building his gear with assistance from VK8ZMR. Doug VK8KK has moved from Alice Springs to Darwin and is not active at the moment. Jim VK8ZSJ, ex VK8ZSJ, has 6 watts to a 5/8 whip on 6 metres and 8 watts to a 3 element beam on 2 mzx. The main activity of the past 24s with a few VK4s and the Southern States. 73, Jim VK8ZSJ, ex VK8ZSJ.

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

AMATEUR RADIO STATION AT INTERNATIONAL CONVENTION

Editor "A.R.," Dear Sir,

The following information is provided as a news item which you might pass on to our fellow Amateurs through the medium of your Amateur Radio Journal or bulletins.

In April this year the 44th Session of ECAC (Economic Commission of Asia and the Far East) will be held in Canberra, A.C.T. This is a very important International Conference and many top government officials will be present.

Eight technicians and myself as Project Manager will be handling the complete electronic side of the Conference for the company which employs us. The electronics include simultaneous interpretation equipment, tape recording, closed circuit television coverage and radio frequency paging.

Three of the technicians including myself have Amateur operators' licences and intend

setting up an Amateur Station at the site of the Conference as a social recreation, for the technical team.

The Department of External Affairs will publish the details of the Conference Bulletin so that any delegates who are Amateur operators or interested in electronics may join in the social activity.

Because of the importance of the occasion, the call of VKIEC (Economic Commission) has been issued for the three weeks of the Conference.

Operation will be a.s.b. or a.m. mainly on 20 metres. Some operation will take place on 40 and 80 metres if sufficient interest is shown by VK stations.

Although not regarded as a new country or rare DX, all stations contacted will receive a QSL indicating the importance of the occasion and details of the operation.

Also as the Amateur operators who will carry out the exercise believe that because of the many overseas countries represented at the conference and the interest shown by the Commonwealth Department concerned, this is an opportunity too good to miss, to publicise our hobby and the international goodwill it fosters.

Please assist us by conveying this information to the Amateur fraternity by any means at your disposal.

—Dennis Wheaton, VK2AAW.

N.Z. ELECTRONICS CONVENTION

Editor "A.R.," Dear Sir,

As you may be aware another National Electronics Convention—Nelson II—is being held in Auckland this August. This convention will once again reach a high technical level and form a meeting place for electronics personnel from all branches of the industry. Previous experience has shown that these conferences are attended by research workers, designers, engineers, technicians and other enthusiasts from all branches of Government—D.S.I.R., Broadcasting, Post Office, Defence, Railways, Forestry, Civil Aviation, etc.—as well as Hospitals, Power Boards, Universities and assorted manufacturing and industrial concerns both working in electronics and employing it in their processes.

We enclose for your information copies of the first two circulars which contain details of papers, trade exhibition and enrolment. We would appreciate any publicity which you can give to this conference which last time drew 450 delegates and 40 papers.

We will ensure that future circulars are sent to you and assure you that any further information can be obtained from the writer.

Thanking you in anticipation of your assistance,

—Robin H. E. Beckett,

Publicity Officer.

CONTEST CALENDAR

6th/7th April: "CQ" W.P.K. Phone Contest (a.s.b. only).
11th/12th May: 17th OZ-CCA Contest (c.w. only).
6th/7th July: "Summer" Top Band Contest (R.S.G.B.).
12th/13th October: 21/28 Mc. Phone Contest (R.S.G.B.).
26th/27th October: 7 Mc. Phone Contest.
7th/10th November: 7 Mc. C.w. Contest.

V.H.F. CONVENTION THE SOUTH EAST RADIO GROUP OF VKs

invite you to their
1968 CONVENTION at
MT. GAMBIER

SAT., SUN. and MON.,
8th, 9th and 10th June, 1968

Further details in May "A.R." and
in Divisional Broadcasts

Sub-Editor: CYRIL MAUDE, VK3ZCK
2 Clarendon St., Avondale Heights, Vic., 3034

V.H.F./U.H.F. OPERATORS PLEASE NOTE

Particulars concerning Easter will be undertaken by Des VK3CJ, Barry VK3ZAW and Eric VK3ZEE, from a hill near Palmer, S.A., 35 miles on a bearing 90 degrees east of north from Adelaide. Hours of operation: Sat., 13th April, 1900-2200; Sun., 14th April, 0600-1000 and 1900-2200; Monday, 15th April, 0600-1000 hours. S.A.T.

144.500 Mc.: 100 watts to 10 element beam. Will call for three minutes on the hour on a.m., listen for two minutes. If no contact, will call on c.w. for three minutes commencing five minutes after the hour, then listen for two minutes.

433.650 Mc.: 100 watts to stacked 8/8 skeleton slots. Commencing 15 minutes after hour S.A.T. Will call one a.m. for three minutes, then listen for two minutes. If no contact, will call for three minutes on c.w., commencing 20 minutes after the hour, then listen for two minutes.

During above schedules aeriels will be pointed on a line through Deniliquin, N.S.W., which is visible from Mt. Kosciuszko (Keith VK3MYL and Mt. Eddie VK3VJP). Calls will also be made at other times beaming VK3, VK4 and VK7. Skeds may be arranged with distant stations on request. Contacts with any stations will be welcome as time and band conditions permit. Further information from Eric VK3ZEE.

VICTORIA

Activity on the v.h.f. bands in the Melbourne area at least has been at a very low level. Over the Xmas period no exotic DX was worked, but if it was, then those contacts did not advertise very well. On the equipment side of things, there appears to have been much activity in the workshop with a number of a.s.b. signals making their appearances on both 6 and 2 metres, and I am told about 25 stations are active on 433 Mc.

The V.h.f. Group's 6 metre converter sales far exceed the group's original plan, by a factor of three and this has delayed the appearance of the 2 metre and 432 Mc. versions. A potential benefit of both versions is that by next month more details should be available. Anyone with suggestions for further projects are asked to write to the V.h.f. Converter Committee, P.O. Box 36, East Melbourne, 3002. Until May, 73, Cyril SZCK.

Eastern Zone, January—50 Mc.: The season started off early with some good openings to 3L VK2, 4, 5 and one to VK3 (Nov. 19, 22, 26, 27, 28, 30, Dec. 3 and 4), then quiet until Christmas (Dec. 23, 24) and opened again over New Year (Jan. 2, 4, 5, 9 and 13). However, nothing unusual happened. No VK1, 8 or 9 heard, also no one logged the VK0 beacon in Gippsland. No short skip under 470 miles observed, hence no Es opening recorded on 2 metres.

144 Mc.: Consistent good openings to VK3, 5, and 7 throughout the season. The VK3V5 opened successfully in the 2 metre band on Dec. 8, Jan. 4 and 14. Morning of the 4th it was interesting to note that 45 minutes after the beacon had opened out on 2 metres, the 6 mzx band then opened up to Adelaide Es was heard, nearly two propagation modes simultaneously—extended Gw and ESI VK3ZEO and VK3BLR/2 were the only VKs worked. Active zone stations are VKs 3ZAT, 3ZCG, 3ZDP, 3ZGA, 3ZBN, 3ZOS, 3ZSS—all are looking out for Es.

432 Mc.: Four or five stations are becoming interested and building gear, also we propose to build an a.t.v. station as a group project. February—52 Mc.: No 6 mzx opening observed in Gippsland, however the m.u.f. peaked above 34 Mc. to the north including Japan and 30 Mc. on 22/23 Feb. The m.u.f. peaked above 40 Mc. for several days between 11th to 16th (24-day cycle); watch the band around these dates over the next three months.

144 Mc.: Some long extended good openings have occurred. VK3ZEO Deniliquin worked into Gippsland on 29th Jan.; same night, we worked 20 miles to the south on a free tx. from ABSN Beggs up to 2200 hours, not seen before or since. Sunday morning Feb. 4 we worked VK5ZLJ, SCJ, SZKR, SZDR, SHF, and worked VK3ZDR again on Feb. 13, 73, George VK3ZCG.

BOOKS OF INTEREST FOR AMATEUR OPERATORS

- ★ A.R.R.L.—**THE RADIO AMATEUR'S HANDBOOK**—45th Ed., 1968 Edition **Price \$6.10 Posted**
The standard reference work and text for everyone—Hams, Experimenters, Students, Engineers, Laboratory Men, Technicians.
- ★ ORR—**THE RADIO HANDBOOK**—17th Edition **Price \$13.45 Posted**
Tells how to design, build and operate the latest types of Amateur Transmitters, Receivers, Transceivers and Amplifiers.
- ★ STONER & EARNSHAW—**THE RADIO TRANSISTOR HANDBOOK** .. **Price \$6.65 Posted**
This up-to-date Handbook covers a wide range of communication for both Amateur Radio and Commercial Applications.
- ★ A.R.R.L.—**THE RADIO AMATEUR'S V.H.F. MANUAL** .. **Price \$3.00 Posted**
- ★ A.R.R.L.—**UNDERSTANDING AMATEUR RADIO** **Price \$3.00 Posted**
- ★ A.R.R.L.—**THE A.R.R.L. ANTENNA BOOK** **Price \$3.00 Posted**
- ★ A.R.R.L.—**SINGLE SIDEBAND FOR THE RADIO AMATEUR** .. **Price \$3.73 Posted**
- ★ A.R.R.L.—**THE MOBILE MANUAL FOR RADIO AMATEURS** .. **Price \$3.73 Posted**
- ★ A.R.R.L.—**THE RADIO AMATEUR'S LICENSE MANUAL** **Price 85c Posted**

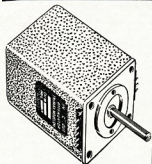
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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

LICENSED AMATEURS

Following are figures for November 1967:-

	Full	Limit	Total
VK1	1321	404	1725
VK2	1122	530	1652
VK3	470	184	654
VK4	190	220	410
VK5	284	131	415
VK6	132	79	211
VK7	19	25	44
VK8	64	13	77
VK9	8	0	8
Totals	3984	1587	5571

W.I.A. POSTAL MOTION 1/67

All Divisions have indicated an AYE vote to this motion. Accordingly, the W.I.A. Federal Contest Committee will be maintained by the Western Australian Division for the ensuing year, 1968, contrary to W.I.A. policy that this committee be maintained by each Division in tri-annual rotation.

INCORPORATION OF THE Q'LAND DIVISION

In the Public Notices section of the Brisbane Courier-Mail for January 24, 1968, a formal notice has been inserted advertising the intention of VK4 Division to become a Company. The Divisional Secretary, Alan Simpson, indicates that their efforts to become incorporated are almost completed, so this action will pave the way for adoption of the new Federal Constitution as then all Divisions will be incorporated societies and able to become members of the Federal Company.

FEDERAL CONVENTION AGENDA

Motion sheets are being prepared and should be in the hands of Divisions early in March. Motions were received from all Divisions, and any further matters will have to be raised as General Business items as the deadline for receipt by F.E. has passed.

OVERSEAS MORSE REQUIREMENTS

Following the reduction in Morse speed requirements for the VK1 to VK9 Divisions, it may be of interest to note conditions existing in overseas countries (Receiving Tests):-

U.K.-Receive 16 words (5 letters)-word in plain language in three minutes, and 10 five-figure groups in 1½ minutes; more than four errors in plain language and more than two in the figures will result in failure.

U.S.A.-Examinations for General, Advanced and Extra classes of Amateur licence are conducted by an F.C.C. engineer. Exams. for all Novice, Technician and Conditional classes are conducted under F.C.C. procedures by a volunteer supervisor (holder of General class or higher licence is usual) in the field. F.C.C. code examinations are given by machine, volunteer examiners mostly use hand sending. The applicant is required to send and receive, at the specified speed, for one minute out of a five minute test without any error.

Europe.-Countries with 12 w.p.m.: Germany, Finland, Netherlands and Norway. Sweden is 18 w.p.m., and France, Switzerland are 10 w.p.m., the latter with a five-minute test and a maximum of three mistakes. (It need not be pointed out that I.T.U. headquarters is in Switzerland!)

AMATEUR OPERATION IN INDONESIA

The Minister for External Affairs, The Hon. Paul Hasluck, recently replied to a query regarding this matter. The Australian Embassy in Djakarta informed the Minister that the Indonesian Government law prohibiting Amateur Radio operation is still in force. It is described by an Indonesian representative of Djakarta Amateur Radio operators as "an old order law". He stated that the Indonesian Communications Council would be prepared to seek the withdrawal of the law and has undertaken to approach the Communications Council.

A.R.R.L. has informed us on the 29th December, 1967, General Soeharto signed a decree authorising Amateur Radio. It is understood that in a further month the Indonesian Government will notify I.T.U. that it no longer objects to Amateur Radio communications and

that the ban can be lifted. There are several "small" groups in Indonesia, and currently two of these are showing signs of making application to I.A.R.U. for membership. Which of these is the proper outfit is at this time somewhat indeterminate!

Australian Amateurs are reminded of para. 78 of the "Handbook" which would seem to preclude communication with Indonesian Amateurs until such time as the P.M.G.'s Dept. has been notified by I.T.U. that the position which has existed for some years has been formally and officially altered.

NEW AWARDS MANAGER

The Federal Awards Manager is now Geoff Wilson, VK3AMK and any applications for DXCC, VHFCC, WAS (VHF), or WAWCA should be sent to him direct at:-

T. Norman Avenue,
Banksia Park, W.A. 6109.

DXCC listing changes should also be forwarded to the same address.

Sufficient postage to cover return of cards must be enclosed with application.

NEW SOUTH WALES

FEBRUARY MONTHLY MEETING

The meeting was held at Wireless Institute Centre on the 23rd and was opened by President-Chairman, Keith Finney, VK2KJ. After the usual formality of reading the previous minutes new members were admitted and approved and welcomed to the W.I.A.

President Keith then gave the customary report of Council activity in which he drew attention to the renovations to the building and the re-decorating of the most impressive room.

Continuing, Keith drew members' attention to the Conventions being held over Easter and appealed to members to attend and assist the Division and the W.I.A. to make this historic event a complete success. He went on to mention the new Handbook of Regulations now available from the Divisional office, the M.G. and the Equipment Store. Keith concluded by saying that ALL members should have a copy and a copy to the club.

Chairman Keith advised that the March meeting would be the Annual General Meeting and election of Council would take place then. The election of Council would be at the April meeting as announced earlier.

The March meeting would also contain the Annual Report of Council in which answers to some of members' queries would be given. A clear statement of the Council's policy would be given with recommendations for the incoming Council.

Concluding the report, Keith advised that renewals of subs. were over 800 already and the new cards for receiving the rate of 50 a day. By the way, have you sent yours? Four lectures were the evening's entertainment, the first on early Gramophones complete with a demonstration was given by Ivan Agar, VK2AIM; the second on Antennas by Hans Ruckert, VK2AOU, proved very interesting. The third was a description with slides of the team of Burtoft and Molen on going to a mountain for the National Field Day. The trials, tribulations and joy in such an exercise led the audience to a mountain operation, but no doubt interested in going mobile, portable, etc.

The lecture was given by Sid Molen on "getting back 93 per cent. of QSL cards". Quite a humorous talk, supported by verse, no actual proof of the method doubtful in itself was presented. There will be no lecture at the March meeting and the April lecture was not confirmed at the time of writing. A visitor to the meeting was Messrs. WVE, of Seattle, on R. R. leave after having been wounded in Vietnam. Al told many stories of that do which can only be described as incredible. One of the stories was about a Goatsford field day where he was well taken care of Amateur style. 73, Stan VK2ZRD.

HUNTER BRANCH

In the usual true democratic fashion, the annual election of officers of the Branch was held on Friday, 1st March, when a small but enthusiastic audience was present. The Divisional President, Keith 2KJ, was there to see that no unworthy practices took place and, since the whole procedure was a matter of less time than it takes to write it down, he could hardly do otherwise. The Patron of the Branch, Frank 2APG, who has been a considerable reshuffle in the other positions. The President this time is Rodney 2CN and it is indeed good to see a new member of the Branch. The Vice-President, Frank 2ZFX, who did such a good job in organisation of both committee and general meetings during the year has found it impossible to continue in the top place, but has agreed to continue in the vice-presidential

FEDERAL QSL BUREAU

The following changes in the A.R.R.L. QSL Bureau list have been notified:-

W1-Hampden County Radio Assn., Box 216, Forest Park Station, Springfield, Mass., 01108.

W4 and K4-H. L. Parrish, K4HXP, RFD 5, Box 804, Hickory, N.C., 28601. (Cards for W4A, WB4 and WN4 continue to go to W4TWP as before.)

KP4-Mrs. Alicia Rodriguez, KP4CL, Box 1061, San Juan, Puerto Rico, 00902.

The new QSL manager for the Canberra Radio Club, Box 1173, Canberra City, A.C.T., is Andrew Davis, VK1DA.

Boys Town Amateur Radio Society, WAOGQI, Boys Town, Nebraska, 68010, U.S.A., advises that Father Flanagan's Boys Home celebrated its 80th Anniversary on 22nd October. Station issued 500 Golden QSL cards to all stations who QSLed us in 1967. However, due to poor equipment and no set operating times, very few of these cards went to DX stations. In order to give any DX station a chance to work them and receive a special award, they will operate at the following times: 1470, 2400 GMT to 0600 GMT; 21405, 1900 GMT to 2130 GMT, Feb. 25, Mar. 3, 10, 17. For each exchange contact they will return one of the awards.

Tubby Vate, VK8NO, ex VK8NO, advises that he has not kept the best health of late and the doctor has ordered him back south. This move may take a few weeks to become effective. VK8UG will continue in operation on 100 per cent. phone basis.

-Ray Jones, VK3RJ, Manager.

FEDERAL AWARDS

DXCC NOTES

The following operations were listed by the A.R.R.L. during 1967 as being unacceptable for DXCC Credit. As the W.I.A. DXCC is based upon the A.R.R.L. list, no credit will be given locally.

- K1IMP/KC4-Navassa Is.
- PY6KA-St. Peter and St. Paul's Rocks.
- VK2ADY/-Heard Is.
- YK100/-Christmas Is.
- YQ8AA/-Cragos.
- IA68B/-Bishop of Rock.
- 1B9WNV/-Blenheim Reef.

An addition to the Countries List is Farquhar, a Farquhar, formerly one of the Seychelles, is now one of the islands making up the British Indian Ocean Territory. Contacts made with Amateur stations on Farquhar, November 19, 1965 or later, are counted as separate from the rest of the Seychelles.

SILENT KEYS

It is with deep regret that we record the passing of the following Amateurs:

- VK2SE-Bert Wright.
- VK2AGK-Alf Gillings.
- VK3CD-J. Rich-Phillips.
- VK3NB-A. F. Nickson.
- VK3TI-Charles Godden.

position with his colleague as Bill ZXT. Both Treasurer and Secretary remain unchanged, Gordon ZZSG and Len ZZFD being the capable men to fill these posts. Zone Correspondent is again Keith ZAK with Joe ZZJO to assist. The v.h.f. liaison officer's post is ably filled by Mac ZZMW while Bill ZZWM remains social secretary. Zone ZAVL, John ZQZ, manager. But here the similarity with last year ends. Two new committees have been formed to deal with broadcasts and publicity and another for activities. Activities committee members are Tony ZZCT, John ZZJG and Bill ZZWM, while on broadcasts and publicity there are Stan ZFL, John ZAXX and associate member Neville Threlfo.

The thanks of all Branch members go to Frank and his 1967 team for a job well done and the best wishes extended to the new executive for a successful and interesting year in 1968.

Bill ZXT reports sensational increases in signal reports since he lifted the beam (umbrella type) to the top of the 70-foot mast at the Coal Point house. At the same time, Allen ZKB must have decided on some modifications or additions since his aerial suffered the buffeting in the recent gales. As for Bill ZFL, his aerial is resplendent with varnished metal wires at present in an attempt, so he says, to find where it is resonant. It seems that this is the price one must pay for owning a.s.b. gear.

Probably the smallest but the highest gain aerial ever built by a Zone ZXT who used it for the 432 Mc. fox hunt at Gosford. It is cunningly mounted through the roof vent of a house and is made up of 1200 ft. of ordinary 80 metre dipoles are still the delight of some, Bruce Morley, our keen associate from Toronto, has constructed a new aerial for receiving and transmitting. The two glistening poles which support this fine edifice are nearly as much a landmark in Toronto as those of the CN Tower. The two glistening poles not only did he get on the air again this month, he even is talking of putting up an aerial also, much to the delight of his mates on 80. The poles for the rather hush hush design have come from the home of John ZXQ who is moving house to Hamilton.

Other than the ZXT, the most popular event of the month has been the well known Gosford Field Day. In the experience of some this has yet to be rivaled by any other event in Australia and certainly none of those that get a three-page spread in the R.S.G.B. Bulletin (sorry there, Communicators) are no longer of local interest.

Some are beginning to complain about the scarcity of contacts on v.h.f. of late and most likely the criticism is justified, since, if it reflected as a general thing on 146, then there is no doubt that it is to be expected that the inauguration of the new activities committee will make the difference needed to get things going again. Broadcasts are suffering some reduction with the elimination, for a trial period, of all callbacks. However, the station signing ZAWX will be on the air 15 minutes before with broadcast with requests for reports. It is to be hoped that the events which dogged the broadcast on the last February Monday will not re-occur, but these reports are a complete absence of signal outside the shack—which wasn't a good thing.

In case you've forgotten, the Branch meetings are held each first Friday of the month in the Crag Building Room at Newcastle Tech. College, Tighes Hill, and the commencement time is 8 o'clock, in the evening of course. Perhaps you are considering coming along to the next one which is, depending on your mailman, either 5th April or 3rd May. Either way, you are assured of a good night's instruction, gossip or whatever and you'll meet a lot of people you haven't seen for years including that bloke who has the very same problem as yourself even if you're in any case, money. So see you there, 73, ZAXX.

CENTRAL COAST RADIO CLUB

The Gosford Field Day was held on Sunday, 25th Feb. Ideal weather helped to make the day an outstanding success, with attendance of over 300.

The feature of the day was the 432 Mc. mobile fox hunt, attracting a field of eight competitors. This is believed to be the first time a 432 Mc. hunt has been held and judging by the enthusiastic support, will certainly not be the last.

The following is a list of prize winners: Mobile Scramble, H.I.—1st, Len Z2L, 2nd, Len Z2L, 3rd, Noel ZASQ, v.h.f.—1st, Vic ZZCF, 2nd, Dave ZAWZ, 3rd, Paul ZZPT, 146 1.m.—1st, ZZSA, 2nd, Bob ZASZ, 3rd, ZZPCQ, 2m.—1st, John ZQZ, 2nd, ZZCV, 2nd, Dick ZZCF, 3rd, Harold ZAAH, 144 Mc. Ped. Fox Hunt—1st, Bob ZASZ, 2nd, Peter (from Lawson), 3rd, Con ZBCC, 4th, Peter (from Lawson), 2nd, Dave ZAWZ, 3rd, Mac ZZIM.

OBITUARY

CHARLES GODDEN, VK3TI

Charles passed away on 1st February, 1968, aged 61 years. He had not enjoyed the best of health for some years and recently retired from active work, and at the time of his death he was employed part-time at broadcasting station 3MA.

Charles was first licensed in May 1937 and remained active throughout the period right up until his death.

During the war he served with the group M, The Australian Special Unit A.I.F. Wireless, and was discharged with the rank of Warrant Officer II. Returning to Mildura after discharge, he continued in the radio service business up to his retirement.

Charles was also active on and off on the bands including short spasm on 2 metres. He also held broadcast operators certificate of proficiency and from time to time did part-time work with the local broadcasting station 3MA.

We, the Mildura Group, extend our deepest sympathy to his wife and four sons.

144 Mc. Long Distance—1st, Bob ZASZ; 2nd, Les ZR2; 3rd, Mac ZZIM, 144 Mc. Ped. Fox Hunt—1st, Leon Skeers; 2nd, COLIN ZBCC; 3rd, Peter (Lawson), 2m.—1st, Paul ZZCF, 2nd, A. Wyatt; 3rd, Keith ZAXX, Ladies Quiz—1st, Mrs. Richmond; 2nd, Betty Gerdes; 3rd, Joan Williams, Ladies' Scavenger Hunt—1st, Jean Williams; 2nd, Patricia Skeers; 3rd, Mrs. E. Agar, Home-brew Equipment—Large, ZAJZ, delatet x8; small, P. J. Charlton, 7 and 14 Mc. sniffer, first original, George Bertou, Prize for longest distance—Al KTWLE, on leave from Vietnam.

Acknowledgments: Ampex, A. & R. Mico, Mullard, M.S.P., W.I.A., Adcola, Ray Ducon, Tech. Book Co., E.E.E. Electronic Parts, Minwatt, Pye, Warburton Franki, Sydney, Slideband Eng., Aust. Electronics Hobart, Mosman T.V., G.E.S., ZRU, ZAXS, 73, Bill ZTS

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VICTORIA

The following agenda items have been selected for the remainder of the year or the monthly general meeting nights:

April—Antennae.
May—Annual Meeting and White Elephant Night.
June—S.S.B. Construction.
July—Baluns.
August—The Megamatch.
September—S.S.B. Linears.
October—Whip Antennae.
November—Portable Equipment.
December—Transistors.

The speakers, selected are all specialists in their field and interesting evenings are assured.

Our Zone held their get together picnic on 4th Feb. at the Moonarra Dam, and a pleasant day was spent by all. Stan ZJPL was controller, David ZJPL was first lecturer, set up by Stan ZAB, George ZJCG and John ZAE.

The A.O.L.C.P. class got away with a good start on Feb. 19, with 18 attending, and the next week (Feb. 26) attendance increased to 22. David ZJPL was first lecturer, set up by George ZJCG, Trevor ZJGA, George ZJCG, and Stan ZJPL, with others assisting. This class will run each Monday evening at the Women's Aux. R.S.G.B. Hall.

3ZAT is now working down in Melbourne so we are sorry to lose you, Aud, and we all wish you the best in your new career. However, looks as though we will gain a new member, John ZAAA (triple "A"), hopes to transfer from Colac to Yallourn around June. Also, Peter ZJWV makes frequent visits to Bairnsdale, operating mobile and from Bairnsdale on Ch. 1.m. Barry ZJQC, Mirboo North, over the next three or four months, will be working in the Orbost and Eldon areas. Rod ZUG (ex OCR) is now living back in Gippsland and working at Warragul.

The Eastern Zone Convention will be held over the week-end of April 20 and 21, near Mirboo North, at the Gippsland Educational Hotel, 2 miles out along Thorpdale Road. Build up a 2 mX snapper to track down the hidden transmitter. We welcome visitors and should be able to provide a good meal. Please write to our Secretary, ZJAB, 10 Chenhall Cres., Traralgon, or phone the President, Rod ZUG, 4388, to see you all at the Convention. 73, George ZJCG.

QUEENSLAND

IPSWICH AND DISTRICT RADIO CLUB

Once again we must report a very active month, climaxed by the club's participation in the John Woe Memorial Field Day. A beautiful location was chosen about 2 miles from Mt. Perry, a hamlet situated at the foot of some 10 miles away, and it proved to be excellent for reception and transmission, all bands from 2.5 Mc. to 30 Mc. were used. A large number of contacts were made for a total of some 500 points. We learnt a lot from our experience which we hope to apply to our next Field Day. A humorous incident at 4.45 PM. Day was when a passing motorist stopped and came over to see what all the people were doing, and asking, "What are you doing?" was to start—his comment almost started a land slide!

The club membership is on the increase once again and we would like to extend a welcome to three new members: Ralph ZJZ, Roy ZJWR and Max ZJWV. We are all pleased to have you in the club chaps; another recent member to our A.O.C.P. class is Allan, who lives at Mt. Glorious and attends our classes each Thursday night and has a mighty long drive home after class. Hope our instructor does not keep you in after class, Allan, it might be hard to explain to the XYL.

Six metre DX is coming in now and one member Alex 4QT seems to be getting his share of J.A.S. believe he has even 10 or 12 way home from work and eventually went QRT with a real pile up calling him. If this keeps up, our QSL manager Bill will be busy with large batches of QSL cards to the JA Bureau.

The club house now sports a set of front steps and they take some getting used to. We have not had them before so now we are planning an official opening and future plans perhaps a set of railings will be next before the official opening to keep all the celebrating members from falling over the steps.

The long awaited get together with the Bundaberg Club was held at Bormba Dam near Gympie, and about 12 club members made the trip up to the Dam. Seven cars went up, operating 6 mX and 10 mX routes and a very good time was had with the Bundaberg troops. The area about the Dam was very scenic and we had a visit from the Sunbeam AAF on the Sunday.

The members from Bundaberg present were Roy ZJWR and Geoff 4GI, also Bob AUD. It appears 4ZRW was also present but no one actually had an eyeball contact with said gear.

Members of our club included Ron 4BG, Dave 4HT, John 4ZJ, George 4ZLG and yours truly 4QT, also s.w.I. Tom who slept in his car and was walking some 2 feet lower for the first time in 10 years. The day was straight out. Activities included a fox hunt and a screening of club films. We are looking forward to another outing on the lines with the Bundaberg Club. We all missed Rusty 4JM at the get together and hope he is not

PRESENTATION OF MERIT AWARD TO VK3ATN

Presentation of A.R.R.L. Technical Merit Award to Ray Naughton, VK3ATN. The presentation was made by Mr. E. J. Wilkinson, of the P.M.G.'s Department. Mr. Max Hull, VK3ZS, looks on.

For story see "A.R." December 1967.

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